UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/965,904	09/28/2001	J. G. Walacavage	200-0665	4251

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Daniel H. Bliss
Bliss McGlynn P.C.
2075 West Big Beaver Road Suite 600
Troy, MI 48084

EXAMINER
PROCTOR, JASON SCOTT

ART UNIT	PAPER NUMBER
2123	

DATE MAILED: 02/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/965,904	WALACAVAGE ET AL.
	Examiner	Art Unit	
	Jason Proctor	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>20 September 2004</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-15</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-15</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>17 January 2002</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5/21/03, 9/28/01</u>.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

U.S. Patent and Trademark Office

PTOL-326 (Rev. 1-04)   Office Action Summary   Part of Paper No./Mail Date 20050127

DETAILED ACTION

1.   Claims 1-15 have been submitted for examination.

2.   Claims 1-15 have been rejected.

Request for Status

3.   The Examiner acknowledges Applicant's several requests for status of the instant

application and regards this Office Action a sufficient response.

Priority

4.   Applicant's request for priority under 35 U.S.C. § 119(e) to provisional application

60/236,964 filed on September 29, 2000 is acknowledged.

Double Patenting

5.   Claim 1 is provisionally rejected under the judicially created doctrine of

obviousness-type double patenting as being unpatentable over claim 1 of copending

Application No. 09/965,905. Although the conflicting claims are not identical, they are

not patentably distinct from each other because the claim language of the copending

application does not distinguish itself as defining an invention distinct from the invention

of the instant application. The step of "constructing a part flow model" is a broader

recitation of "constructing a flowchart of interaction of an operator in a workcell". The

step of "determining whether the part flow model is acceptable" is equivalent to "testing

whether logic of the flowchart is correct". The step of "using the part flow model to test

PLC code to build a manufacturing line" is equivalent to "using the flowchart to test PLC code to build the workcell if the logic of the flowchart is correct".

Although the first step, "constructing a part flow model", is a broader recitation of the first step of the instant application, it would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention that a part flow model could include the interaction of an operator in a workcell, rendering claim 1 of the instant application unpatentable over claim 1 of the copending application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 101

6.   35 U.S.C. § 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7.   Claims 1-15 are rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter. MPEP 2105 reads as follows:

> If the broadest reasonable interpretation of the claimed invention as a whole encompasses a human being, then a rejection under 35 U.S.C. 101 must be made indicating that the claimed invention is directed to nonstatutory subject matter. Furthermore, the claimed invention must be examined with regard to all issues pertinent to patentability, and any applicable rejections under 35 U.S.C. 102, 103, or 112 must also be made.

Claims 1-15 recite methods that are not directed to the technical arts. While the context of the methods is a programmable logic controller logical verification system, the methods of claims 1, 9, and 15 are directed toward creation and use of a flowchart. A reasonable interpretation of the term "flowchart" includes a diagram on paper, while the

other recited steps of testing, using, and starting a timer could be performed by a human being. The inventions of claims 1-8, 9-14, and 15 are not limited to the technology arts and define a method that can be performed by a human being. Claims 1-15 are therefore nonstatutory.

To expedite a complete examination of the instant application the claims rejected under 35 U.S.C. § 101 (nonstatutory) above are further rejected as set forth below in anticipation of applicant amending these claims to place them within the four statutory categories of invention.

Claim Rejections - 35 USC § 112

8.   The following is a quotation of the second paragraph of 35 U.S.C. § 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9.   Claims 1-15 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 9, and 15 each conclude with the step "using the flowchart to test PLC code to build the workcell if the logic of the flowchart is correct" which renders these claims vague and indefinite. The phrase "using the flowchart to test PLC code to build the workcell" is unclear and open to multiple interpretations. One interpretation is that the intended use of the PLC code is to build the workcell. A second interpretation is that the flowchart is used to both test the PLC code and to build the workcell. The phrase appears in the specification (page 5, line 3) however the meaning is not clarified. It is

unclear whether the result of this step is PLC code that has been tested or a workcell that has been built.

Additionally, the phrase "if the logic of the flowchart is correct" renders the claim indefinite. The method does not define what is to be done if it is discovered that the flowchart is incorrect. It is unclear whether making a correction to the logic of the flowchart should be construed as a different and distinct from the inventions of claims 1, 9, and 15.

Claims rejected but not specifically mentioned stand rejected by virtue of their dependence.

Claim Interpretation

10.   In the interest of compact prosecution, examiner makes the following claim interpretations in order to apply prior art to the claims.   See *Ex parte Ionescu*, 222 USPQ 537 (Bd. Pat. App. & Inter. 1984).

11.   Regarding claims 1, 9, and 15, the step "using the flowchart to test PLC code to build the workcell if the logic of the flowchart is correct" is interpreted as "using the flowchart to test PLC code and building the workcell if the logic of the flowchart is correct". As the disclosure does not teach what steps are to be taken if the logic of the flowchart is incorrect, the scope of inventions claimed by claims 1, 9, and 15 include only those where the logic of the flowchart is correct.

Claim Objections

12.   Applicant is advised that should claim 8 be found allowable, claims 14 and 15 will

be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. Applicant is

advised that should claim 14 be found allowable, claims 8 and 15 will be objected to

under 37 CFR 1.75 as being a substantial duplicate thereof. Applicant is advised that

should claim 15 be found allowable, claims 8 and 14 will be objected to under 37 CFR

1.75 as being a substantial duplicate thereof. When two claims in an application are

duplicates or else are so close in content that they both cover the same thing, despite a

slight difference in wording, it is proper after allowing one claim to object to the other as

being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 102

13.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14.   Claims 1-15 are rejected under 35 U.S.C. § 102(b) as being anticipated by

"Handbook of Simulation", edited by Jerry Banks, hereafter referred to as *Banks*.

Regarding claim 1, *Banks* teaches an *entity* and a *resource* (§§ 1.3.3 and 1.3.4,

page 7-8). An entity can serve other entities. An example is a bank teller, which

provides standard banking services to other entities, namely customers. A resource is

an entity that provides service to dynamic entities. In the language of claim 1, the

operator functions as and is equivalent to a dynamic entity while the *workcell* is

functions as and is equivalent to a resource. The operator moves through the system

interacting with other entities. The workcell provides services to the operator, in the

form of controllers modeled by PLC code. Such a simulation is known in the art and

taught by *Banks*.

Regarding the step of testing the interaction, including using the entity-resource

model to test the PLC code, *Banks* teaches the steps of *verification* and *validation* (§

1.7, steps 6 and 7, page 17). Verification is the step of confirming that the operational

model performs properly. Validation is the step of determining that the model accurately

represents the real system. Testing the interaction of entities in the model is known in

the art and taught by *Banks*.

Regarding the step of building the workcell, *Banks* teaches the step of

implementation (§ 1.7, step 12, page 18). Implementing the system that has been

carefully modeled is well known in the art and taught by *Banks*.

15.   Regarding claims 2-4, *Banks* teaches the concepts of *activities* and *delays*

(§1.3.6, page 8). An *activity* relates to a predetermined period of time. A *delay* relates

to an indefinite period of time. *Banks* also teaches an example simulation where

various durations between events are timed (Example 1 and Table 1.1, pages 4-5). The

step recited by claim 2 is equivalent to, for example, measuring the Service Time in

Example 1. The step recited by claim 3 is equivalent to, for example, recording the

Arrival Time of the Customers in Example 1. The step recited by claim 4 is equivalent to, for example, defining the Time Between Arrivals of the Customers in Example 1.

16.   Regarding claims 5-7, *Banks* teaches the concepts of interaction between entities and resources (§§ 1.3.3, 1.3.4 and 1.3.5, page 7-8). Inherent in these interactions is the concept of "commands" that the entities perform. To wit, the example simulation (Example 1 and Table 1.1, pages 4-5) would have been completely nonfunctional if the interactions between the Customers and bank teller were not a predefined set of commands. Specifically, the Customers are commanded to Arrive at specific times, to form a Queue, to request Service from the teller, and to leave the bank model once Service is completed. The bank teller likewise has a set of commands that define the interaction with the Customers. The command to request Service from the teller has a resource, specifically the teller's ability to interact with only one customer at a time. The resource has a capability, specifically the teller's privileged access to the functionality of the bank.

17.   Regarding claim 8, *Banks* teaches the concepts of timing a dynamic entity's Time In System (Example 1 and Table 1.1, pages 4-5). The Time In System is a measure of the time elapsed between an entity beginning the execution of commands and that entity completing the execution of commands, functionally equivalent to executing commands when a timer is started.

18.   The method of claim 9 recites the steps of claim 1 wherein the step of testing additionally comprises starting a timer. Claim 2, which depends from claim 1, recites this same limitation. Claim 9 is therefore rejected for the same reasons give above for claims 1 and 2.

19.   Claims 10-14 recite further limitations of claim 9 which correspond to claims 2-7 and are therefore rejected for the same reasons given above for claims 2-7.

20.   Claim 15 recites the combined limitations of claims 1-8 and is therefore rejected for the same reasons given above for claims 1-8.

Conclusion

Art considered pertinent by the examiner but not applied has been cited on form PTO-892.
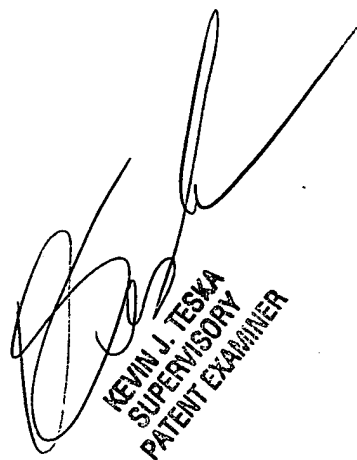
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Proctor whose telephone number is (571) 272-3713. The examiner can normally be reached on 8:30 am-4:30 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin J Teska can be reached on (571) 272-3716. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jason Proctor
Examiner
Art Unit 2123

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